

PROFESSOR'S NAME	Dr. Debasis Deb and Dr. A K Verma
DEPARTMENT	Mining Engineering
INSTITUTE	IIT Kharagpur
COURSE OUTLINE	<p>This course is a foundation level course on Rock Mechanics. Broadly the content of this course can be divided into two broad topics (1) theoretical topics, and (2) Applied topics.</p> <p>Objectives Learn the properties of rock, rock mass and natural geological materials, their mechanical behavior, stability of structures made in rock mass, applications from tunneling, mines and petroleum fields</p> <p>Learning Outcome</p> <ol style="list-style-type: none"> 1) Understand how does solid material like rock behaves under various loading conditions 2) Solve problems associated with structures made in rock mass, like tunnels, mine galleries, shafts, slopes, etc. 3) Evaluate support behaviour and understand fundamentals of ground control issues 4) Think independently to frame problems in rock mechanics 5) Prepare for advanced level subjects in rock mechanics, numerical modeling, instrumentations, 1D and 3D Mechanical Earth Modeling (MEM) and others <p>Course outline Introduction to basic terminologies, In-situ stress and deformation measurements, In-situ strength measurement, Rock mass classification, Rock slope stability, Pillar Design, Artificial support, subsidence.</p> <p>Stress and strain analysis, stress and strain relationship, weight-volume relationship of porous rocks or soil, stresses in underground openings, Rock failure mechanisms and their applications, subsidence due to underground excavations.</p>

COURSE DETAILS

Sl. No	Module ID/ Lecture ID	Lecture Title/Topic	Lecture Duration
1	C11-Mod1	Introduction to Rock Mechanics	0:19:54
2	C11-Mod2	Stress Strain Analysis - Part 1	0:57:23
3	C11-Mod3	Stress Strain Analysis - Part 2	0:47:58
4	C11-Mod4	Stress Strain Analysis - Part 3	0:55:24
5	C11-Mod5	Stress Strain Analysis - Part 4	0:58:34
6	C11-Mod6	Stress Strain Relationship - Part 1	0:57:49
7	C11-Mod7	Stress Strain Relationship - Part 2	0:59:03
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9			
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